

**R18-9-E313. 4.13 General Permit: RUCK® System, Less Than 3000 Gallons Per Day Design Flow**

A. A 4.13 General Permit allows residential applications for a RUCK® system.

1. Definition. For purposes of this Section a “RUCK® system” means a proprietary treatment and disposal system for residential applications that requires segregated drains for conducting dishwater, kitchen sink, and toilet flush water to a black water tank and all other wastewater to a gray water tank.
    - a. Treated wastewater from each tank is delivered to a proprietary, engineered composite disposal bed system that includes an upper distribution pipe to deliver treated black water to a proprietary, columnar, sand-filled bed.
    - b. The wastewater drains downward into a sand bed, then into a pea gravel bed with an internal distribution pipe system that delivers the treated gray water.
    - c. The entire composite bed is constructed within an excavation about six feet deep.
    - d. The system typically operates under gravity flow from the black water and gray water pretreatment tanks.
    - e. A proprietary sampling assembly is installed at the midpoint of the disposal line run and at the base of the composite bed during construction to monitor system performance.
  2. An applicant may use a RUCK® system, which is typically limited to soil conditions where a standard system described in R18-9-E302 is acceptable, if the total nitrogen content in the wastewater is reduced before release to the native soil.
- B. Performance. An applicant shall ensure that a RUCK® system is designed on the basis that the treated wastewater released to the native soil meets the following criteria:
1. TSS of 30 milligrams per liter, 30-day arithmetic mean;
  2. BOD5 of 30 milligrams per liter, 30-day arithmetic mean;
  3. Total nitrogen (as nitrogen) of 30 milligrams per liter, five-month arithmetic mean, or 15 milligrams per liter, five-month arithmetic mean, if demonstrated under subsection (D); and
  4. Total coliform level of 1,000,000 (Log10 6) colony forming units per 100 milliliters, 95th percentile.
- C. Reference design. An applicant may design and install a RUCK® system achieving the performance requirements specified in subsection (B) by following a reference design on file with the Department. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant’s submittal of the Notice of Intent to Discharge.
- D. Alternative design. An applicant may submit an alternative design to the RUCK® system if, following the requirements in R18-9-A312(G), the design achieves equal or better performance than that specified in subsection (B).
1. The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.
  2. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant’s submittal of the Notice of Intent to Discharge.
  3. If nitrogen reduction to a level from 15 to less than 30 milligrams per liter is proposed, the applicant shall ensure that the supplemental information includes specifications on system nitrogen reduction performance and corroborating third-party test data.

**Historical Note**

New Section adopted by final rulemaking at 7 A.A.R. 235, effective January 1, 2001 (Supp. 00-4).